

of higher quantity of carbohydrates, especially the starch content and soluble sugars makes the bamboo relatively more susceptible to insects/termites (Beeson, 1941; Roonwal and Thapa, 1960 and Suthoni, 1988). In addition, the bamboos under field conditions are infected by a large number of fungi, thus making them highly

susceptible to insect attack (French, 1978; Shukla et al., 1978 and Tyagi et al., 1984).

October 16, 1995

S.C. MISHRA

M.L. THAKUR

*Forest Research Institute,
Dehra Dun 248 006.*

REFERENCES

- BEESON, C.F.C. (1941): Ecology and control of forest insects of India and neighbouring countries, (revised 1961). xii + 1-1007. (Vasant press, Dehra Dun).
- ESPILOY, Z. B. (1983): Variability of specific gravity, silica content and fiber measurements in Kawayan Tinik (*B. blumeana*). *NSTA Tech. J.*, 8: 42-72.
- FRENCH, J.R.J. (1978): Preliminary laboratory screening of wood decayed blocks to *Coptotermes acinaciformis*, *Mastotermes darwiniensis* and *Nasutitermes exitiosus*, Mater, U. Org. 13: 207-221.
- MISHRA, S.C. & S.S. RANA (1992): Laboratory evaluation of natural resistance of bamboos to termite *Microcerotermes beesonii* Snyder (Isoptera: Termitidae). *J. ent. Res.* 16: 311-318.
- ROONWAL, M.L. & R.S. THAPA (1960): Experiments on fresh water seasoning (water immersio) of three species of Indian timbers to provide anti-insect protection. *Indian For. Rec.* (N.S.) (Ent.) 10 (1): 41.
- SANDERMANN, W. & H.H. DIETRICH (1967): Untersuchungen über termiten rezistentz. *Holzer. Holz. Roh. Werkst.*, 15: 281-297.
- SANYAL, S.N., A.S. GULATI & A.K. KHANDURI (1988): Strength properties and uses of bamboos. A review. *Indian Forester* 114: 637-649.
- SEMANA, J.A., J.O. ESCOLANO & M.R. MONSALUD (1967): The Kraft pulping of some philippine bamboos. *TAPPI*, 50: 416-419.
- SEN-SARMA, P.K., M.L. THAKUR, S.C. MISHRA & B.K. GUPTA (1975): Wood destroying termites of India in relation to natural termite resistance of timbers. Final Tech. Rep., P.L. 480, F.R.I., Dehra Dun 1-187.
- SHUKLA, A.N., S. SINGH & H.S. SEHGAL (1988): Diseases and deterioration of bamboo in India. *Indian Forester*, 114: 714-719.
- SUTHONI, A. (1988): A simple and cheap method of bamboo preservation. *Proc. Int. Bamboo Workshop*, (14-18 Nov., Cochin, India) 209-211.
- TYAGI, B.K., P.K. SEN-SARMA, P.S. REHILL & P.C. PANDEY (1982): Termite fungi interactions. I. Bioassay in decayed wood block to *Coptotermes heimi* (Wasm.), *Neotermes bosii* Snyder and *Microcerotermes beesonii* Snyder. *Assyut J. Agric. Assyut* (Egypt) 13: 139-147.

41. NEW DISTRIBUTIONAL RECORDS OF PLANTS FROM ORISSA

In the course of our studies on flora of Orissa, a number of plants were collected from different parts of the state. 5 angiospermic taxa collected recently, were identified with the help of relevant taxonomic literature and consultation of authentic herbarium specimens at Central National Herbarium, Howrah (CNH) as *Aristolochia tagala* Cham., *Sauromatum venosum* (Aiton) Kunth., *Spermacoce mauritiana* Osea Gideon ex Verdc., *S. latifolia* Aubl. and *Spilanthes iabadicensis* Moore. Scrutiny of literature revealed that these species have not been reported from Orissa. Updated nomenclature, phenology, ecology, citation of

specimens studied and useful notes on them are presented below. All the materials have been deposited in the Herbarium of Regional Plant Resource Centre, Bhubaneswar.

Aristolochia tagala Cham. Linnaea 7: 207.t.5.f.3.1832; Haines, Bot. Bihar & Orissa 786.1924. *A. acuminata* Roxb. Fl. Ind. 3:489.1832, non Lam. 1783. *A. roxburghiana* Klotzsch, Monatsber. Deutsch. Akad. Wiss. Berlin 596.1859; Hook.f., Fl. Brit. India 5:75.1886 (Aristolochiaceae)

Fl. & Fr.: Throughout the year.

Ecology: Occasional, climbing on trees and shrubs in semi-evergreen forests.

Specimens examined: Sanaghagra, Keonjhar district, 20.xi.95, B.K. Mohapatra 563.

Haines (*l.c.*) suspected that the species occurs in Purneah, Bihar, but he actually did not collect the plant. Thus, the occurrence of the taxon in Keonjhar district is a new distributional record for Orissa.

Sauromatum venosum (Aiton) Kunth, Enum. Pl. 3:28.1841; Nasir in *Fl. West Pak.* 120:14.1978. *Arum venosum* Aiton in *Hort. Kew.* 3:315,1789. *Sauromatum pedatum* (Willd.) Schott & Endl. *Melet. Bot.* 17,1832; Nicolson in *Fl. Hassan Dist.* 789.1976. *S. guttatum* (Wall.) Schott in Schott & Endl. *Melet. Bot.* 17.1832; Haines, *Bot. Bihar & Orissa* 862.1924. (Araceae)

Fl.: June-July. **Frs.:** August-November.

Ecology: Locally abundant in open rocky jungles, often found in rock crevices.

Specimens examined: Sanaghagra, Keonjhar district, 22.xi.95, S.C. Jena 5718.

According to Haines (*l.c.*), it is commonly found in Chotanagpur, Bihar at an elevation of about 333 m. The present report of its occurrence in Sanaghagra of Keonjhar district extends the range of distribution of the species to Orissa.

Spermacoce mauritiana Osea Gideon ex Verdcourt, *Kew Bill.* 37:547.f.26-32.1983; Sivarajan *et al.* *Proc. Ind. Acad. Sci. (Plant Sci.)* 97 (4): 356. 1987. *Borreria repens* DC. Prodr. 4:544.1830, non *Spermacocerepens* Willd. ex Cham. & Schlecht. (1828) nes Sesse & Moc. (1893) nec Larranaga (1923). *S. decandollei* Deb *et Dutta*, *J. Econ. Tax. Bot.* 5(5): 1044. 1984, *nom. superfl.* (Rubiaceae)

Fl. & Fr.: Throughout the year.

Ecology: Rare, in moist shady localities and forest floors in association with *Mitracarpus villosus*, *Spermacoce articulatis* and other herbaceous elements.

Specimens examined: Sanaghagra, Keonjhar district, B.K. Mohapatra 5636, 3.xi.95; Ekamrakanan (RPRC) campus, Bhubaneswar, Khurda district, 28.xi.95, P.C. Panda 4198.

Spermacoce latifolia Aublet, *Hist. Guiane Frtan* 1:55.t. 19.f.1.1775; Sivarajan *et al.* *Proc. Ind. Acad. Sci. (Plant Sci.)* 97(4): 355.1987; Deb & Dutta, *J. Econ. Tax. Bot.* 5(5): 1050.1984. *Borreria latifolia* (Aublet) K. Schum, *Mart. Fl. Bras.* 6(6): 61.1888. *B. eradii* Ravi *J. Bombay nat. Hist. Soc.* 66(3): 539.t.1.f-1-10.1970 (Rubiaceae)

Fl. & Fr.: August-November

Ecology: Occasional, a weed in moist wastelands and rocky soils in post-monsoon period.

Specimens examined: Sanaghagra, Keonjhar district, 3.xi.95., R.K. Moharana 5292: Ekamrakanan (RPRC) premises, Bhubaneswar, Khurda district, 12.xi.95, P.C. Panda 4290.

Though Sivarajan *et al.* (*l.c.*) described the flowers as pink, all the plants collected by us always had white flowers.

Spilanthes iabadicensis A.H. Moore in *Proc. Amer. Acad. Arts.* 42:542.1907; Griersonin Dassanayake & Fosberg, *Rev. Handb. Fl. Ceylon* I: 221. 1980; Verma *et al.* *Fl. Raipur, Durg & Rajnandgaon* 204.1985 (Asteraceae)

Fl. & Fr.: October-January.

Ecology: Occasional, a weed in moist wastelands

Specimens examined: Sanaghgra, Keonjhar district, 3.xi.95, B.K. Mohapatra 5296.

Spilanthes iabadicensis A.H. Moore can be distinguished from *S. calva* DC. by its having achenes with fragile pappus bristles and ciliate margins and from *S. paniculata* Wall. ex DC. by smaller capitula, smaller achenes and weak pappus bristles. Probably the only report of its occurrence in India is by Verma *et al.* (*l.c.*) from Bhilai in Madhya Pradesh.

June 15, 1996

P.C. PANDA

B.K. MOHAPATRA

P. DAS

Taxonomy & Conservation Division,
Regional Plant Resource Centre,
Bhubaneswar-751015, Orissa.